Skylines
Aerostructures

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# Aerostructures' repair facility network is firmly focused on capturing a significant share of the growing global market for engine build up kit MRO work

*The market for inventorying, inspecting and installing the thousands of parts that make up an engine build up (EBU) kit – the wire harnesses, tubes, ducts, hoses, valves, and switches that serve as the interface between an aircraft engine and its nacelle system – when an engine is serviced is mushrooming in certain parts of the world. In an effort to capture a slice of this growing category of maintenance, repair and overhaul (MRO) work, representatives from Aerostructures' worldwide repair facility network met in Singapore and Foley recently for separate global strategy events. "The Europe/Middle East/Africa (EMEA) region has developed a thriving EBU MRO business in recent years," according to Prestwick Service Center Marketing & Sales Manager Jim Smith. "While the other regions, Asia and the Americas, have not seen the same robust growth in EBU MRO activity the EMEA has experienced, company leadership recognized that EBU MRO sales opportunities do exist in these parts of the world. Leadership also believes that capitalizing on these opportunities requires a global strategy that matches the requirements of key global customers and leverages the benefits of the Aerostructures Original Equipment/MRO partnership." In this photo, Prestwick repair mechanics are pictured installing an EBU kit on a British Airways V2500-A5 engine.*

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UTC Aerospace Systems

With more than 5,600 Airbus A320 Family aircraft in operation across the global airline fleet, it's hardly surprising that an A320 takes off or lands somewhere in the world every 2.5 seconds of every day. And given that Airbus has sold out A320 production until 2016, the huge global A320 fleet will continue to grow. Growing along with it is the demand for engine build up *(EBU)* maintenance, repair and overhaul *(MRO)* work.

An EBU is essentially a kit of parts that serves as the interface between an aircraft engine and its nacelle system. The kit consists mainly of engine mounts, wire harnesses, tubes, ducts, hoses, valves, and switches manufactured by Aerostructures… along with literally hundreds of nuts, bolts, washers, seals, etc. Not only do each of these individual EBU elements – or "piece parts" – require occasional repair, the entire EBU kit has to be removed each time an engine is serviced. Before it is re-installed, the EBU kit must be inventoried for missing parts, configuration checked to the latest standard, and visually inspected for damage. And the market for this type of EBU MRO work has mushroomed in recent years in certain regions of the world.

In the Europe/Middle East/Africa *(EMEA)* region, for example, EBU MRO sales now represent 25 percent of total MRO sales. Capturing 50 percent of the available global market by 2017 is the goal of Aerostructures' worldwide network of MRO sites. And creating a strategy to accomplish this ambitious goal recently brought representatives from the various repair operations together in Singapore and Foley.

## *Singapore in November, Foley in December*

"The Prestwick and Toulouse MRO facilities have had the opportunity to service the EBU as a kit for many years," according to Prestwick Service Center *(PSC)* Components /EBU Business Unit Leader Peter Bryden. "We take all the parts, which number over a thousand, and put them through our MRO repair process and certify them as serviceable as a whole kit rather than as individual piece parts. This approach has allowed us to develop marketing strategies over the years and grow this business in the EMEA region, as well as to continue to market individual piece part repairs."

Added PSC Marketing & Sales Manager Jim Smith: "The EMEA region has developed a thriving EBU MRO business in recent years. While the other regions, Asia and the Americas, have not seen the same robust growth in EBU MRO activity the EMEA has experienced, company leadership recognized that EBU MRO sales opportunities do exist in these parts of the world. Leadership also believes that capitalizing on these opportunities requires a global strategy that matches the requirements of key global customers and leverages the benefits of the Aerostructures Original Equipment/MRO partnership."

With the above in mind, EBU MRO Global Strategy events were conducted in Singapore in November and Foley in December.

The strategic approach that emerged during the events focuses on three EBU MRO market segments… each influenced by distinct market forces and drivers.

One segment is engine leasing companies, according to Smith.

## *Getting up to speed*

"Historically, when an engine is being returned from lease to an engine leasing company, the engine would be inducted into an engine MRO provider for EBU inspection and inventory checks, with any issues being rectified prior to storage at the lessor or dispatch of the engine to the next lessee," he said. "This activity is a burden for engine shops as it utilizes an engine induction slot for relatively little financial return. What's more, EBU MRO is not necessarily a core engine shop skill. From the engine

leasing company's perspective, the delays resulting from the engine MRO provider's reluctance to complete this activity, coupled with the time required to rectify any EBU issues, negatively impacts the returned engine's availability for lease… with an associated impact on revenues."

The Aerostructures solution is to offer a series of EBU kit inventory checks and visual inspections, including configuration management.

"The inventory check we offer on EBUs lets the leasing company know what's missing from the EBU kit and the cost of replacing those missing parts," Bryden explained. "Completing a visual inspection of the EBU on the engine identifies what parts need repair or replacement, along with the associated cost. As far as configuration management, the EBU kit is a very complex group of over a thousand parts – it's a very complex task to make sure it conforms to the latest standard. We manage configuration checks and advise what needs to be modified/replaced within a kit to keep it to the latest standard and the correct configuration."

The second market segment Aerostructures' global MRO network is targeting is the engine MRO shops themselves.

"An engine MRO shop would never receive an EBU for repair as a standalone EBU," noted Bryden. "An engine MRO shop's core activity is the maintenance, repair and overhaul of the core engine. But many airlines leave the EBU on the engine when they send it to an engine MRO shop for repair/overhaul. In order for the engine shop to carry out such an overhaul on an engine, it must remove all of the EBU kit items in order to gain access to the engine for overhaul. The opportunity for Aerostructures stems from the fact that once the EBU kit items are removed from the engine, they need to be inspected for serviceability and missing parts before the kit is reinstalled on the engine after it's overhaul."

The third market segment identified in the EBU MRO global strategy consists of airline operators seeking repair of individual EBU parts.

While the Prestwick and Toulouse sites already possess the full capabilities and expertise to perform EBU MRO work for all three targeted market segments, Bryden said Singapore, Foley and the other Aerostructures repair facilities will face a few challenges in getting up to speed.

## *Eager and enthusiastic*

"Both the Foley and Singapore facilities have varying degrees of repair capabilities on individual EBU piece part repairs," he said. "Both shops have wire harness repair cells, some level of repair capability on engine mounts, and the ability to pressure test and repair tubes, ducts and hoses. The new skills required would involve the handling of the engines and the ability to remove and install the EBU kit on the engine. They'll also need to allocate floor space for engine storage. The more recent additions to the MRO network – in Dubai, Turkey, China and Brazil – are only just embarking on the EBU MRO journey. Those sites will have to develop the capabilities to both repair EBU kit piece parts and also handle the EBU as a kit."

Both the Foley and Singapore MRO team members that participated in the recent global strategy events said they're eager and enthusiastic to pursue EBU MRO sales opportunities.

"Everyone started and finished the week with the desire to 'protect and grow' the aftermarket," said Alabama Service Center *(ASC)* MRO Sales and Marketing Director Kenneth McCammon. "The key to success will be sticking to the plan. We now have a marketing strategy – including an aggressive time line, targeted customer lists and a toolbox of excellent marketing material – to guide us through the

necessary market education. As with any new customer base, there are inherent challenges – such as relationship building, understanding customer needs, and resource allocation. But given the outstanding coordination and leadership by the Prestwick team, the fact that aircraft engines and their EBU kits represent a global market, and also that the ASC already has repair capabilities on many of the piece parts which make up the EBU kit, we'll be able to hit the ground running with this strategy. We just need to achieve complete operational readiness as soon as possible, ensure all the applicable part numbers are captured on our capabilities list, and go share the message with the key customer contacts."

Added Goodrich Aerostructures Service Center-Asia *(GASCA)* Sales and Marketing Regional Director Sam Lim: "The main highlight of the November event for me was gaining an understanding of the EBU MRO business from the PSC and the Toulouse site. It's a sizeable market segment that can provide a good revenue stream to support business growth. In order for us to succeed, two things have to happen concurrently. First, we have to develop the necessary internal capabilities and set up adequate shop floor space for this new activity. Secondly, we need to drive the marketing campaign with the right resources to targeted customers – engine leasing companies, engine MRO shops, and key airline operators. Fortunately, GASCA can leverage Prestwick's and Toulouse's experience to support gaining the necessary capabilities and achieving the desired marketing thrusts."

## Toulouse facility leverages drone technology to snap aerial photos as cost-effective alternative to a helicopter flyover

The use of drones – remote-controlled unmanned aerial vehicles – has been proposed for a variety of interesting purposes These include everything from entering radiation-filled "hot zones" where human access would be dangerous to search for survivors to conducting aerial counts of critically endangered Sumatran orangutans… which nest in treetops, making them difficult to study. Recently, the Aerostructures facility in Toulouse, France found a drone useful for a slightly more mundane – but still important – task. The project? Snapping aerial photos of a facility with a rapidly changing footprint.

The Colomiers facility near Toulouse was inaugurated in 1989 and has seen significant changes in its internal layout stemming from improvements generated by use of the Lean – and, more recently – ACE tools. The site has also evolved outside… with the construction of a new building

*This remote-controlled drone – which featured six helicopter-style propellers – was used last month to snap aerial photos of the Aerostructures facility in Toulouse, France. The drone weighed only 2.2 pounds (about four kilograms) and was equipped with a battery capable of providing 10 minutes worth of power… enough for short flights. (Photo by Jean-Michel Janniere)*

housing Airbus A350 XWB nacelle-related activities – from support function office areas to a paint shop and hall dedicated to the assembly of A350 thrust reversers.

This changing footprint triggered the need for updated aerial photos, including ones capturing the entire site and its extremely close proximity to the Airbus Delivery Center on one side and the Clement Ader facility (where A330s and A350 XWBs are assembled) on the other.

"Back in the 1990s, the only way to take aerial photos in an area close to the nearby Toulouse-Blagnac airport was to have a photographer onboard a helicopter, which came with a price," according to Employee Communications Manager Jean Michel-Janniere. "Today, technology brings new opportunities. A drone, remotely controlled from the ground and equipped with a camera and a stabilizing gimbal, can do the job equally well."

That's precisely what happened on a cold and sunny December afternoon. A camera-equipped drone featuring six helicopter-style propellers was prepared for takeoff. The photographer then called Toulouse-Blagnac airport air traffic control to ask for permission to fly the drone up to an altitude of 150 feet (50 meters). The green light was given and the drone took to the skies to complete its photographic mission.

*Pictured above is one of a series of aerial photos of the Aerostructures facility in Colomiers near Toulouse shot by a remote-controlled drone in December. Visible in the center foreground is the building expansion added to accommodate Airbus A350 XWB thrust reverser assembly and related activities. The tall building in the background is the Airbus Clement Ader facility, where A350 flight test aircraft MSN004 is currently being readied to join the test fleet. The facility is named after a French inventor, engineer and aviation pioneer. Thirteen years before the Wright Brothers flew at Kitty Hawk, Ader piloted his invention, the bat-winged Éole, to the world's first powered flight in a heavier-than-air aircraft.*

# In making the transition from Mexico to a new assignment in China, Mexicali employee sees both cultural differences and two facilities united by the Four Gears

When it comes to readying a facility to accept manufacturing work, Paco Cossio has been there and done that.

As one of the first 25 employees hired at the Mexicali facility (he came aboard before the site even opened its doors in October 2008), Cossio was instrumental in building everything from its tool shop and welding cell to its on-site gymnasium and Welcome Center. As Mexicali's on-load team leader, he supervised the transfer of numerous new work (part numbers) into Mexicali – including Boeing 787 noselips and detail part fabrication and welding, as well as V2500 detail part fabrication and CF34 customer satisfaction units.

"I also oversaw the 137,000-square foot building expansion in Mexicali, working closely with my mentor from Chula Vista, Facilities Manager Paul Sackos," said Cossio. "This project was completed on schedule, on budget, and had no negative impact on Mexicali production. It was a great experience for me to do a 'start-up' of a brand new facility and help lead the transfer of new work into Mexicali."

*Paco Cossio, a former project engineer at the Mexicali facility, now serves as Industrial Transition Lead at the Tianjin OE facility, where he is responsible for site industrialization with regards to creating a visual factory, establishing work cell layouts (flow and linkage), new equipment installation, and new construction work. "In short," he says, "I'm responsible for converting the shop here into a world-class manufacturing facility."*

Now all that valuable experience is being put to good use in another part of the world: Tianjin, China.

## *Culture shock*

"I was invited to participate on the 'Transfer Team' to do on-load of new part numbers into the Tianjin Original Equipment *(OE)* facility (Goodrich Aerospace Technologies Tianjin Co., Ltd. or GATT)," Cossio explained. "I said yes to the invitation for several reasons. Not only was it a great experience for me both professionally and personally, I had experience doing transfers of product from one Aerostructures site to another – which are called 'make to make' transfers. I thought I would be a value-added person for this project."

In his new role as Industrial Transition Lead at the Tianjin OE facility, Cossio is responsible for site industrialization with regards to creating a visual factory, establishing work cell layouts (flow and linkage), new equipment installation, and new construction work. And while he's finding the assignment rewarding, he admits to a certain amount of "culture shock" in making the transition from Mexico to China.

"The cultures are totally different. But it was not a huge shock for me since I learned a little about Chinese culture while studying the Chinese language for about a year back in 2010," said Cossio.

With that said, he adds that the language barrier has still been his major challenge.

"I'm working hard to learn more Chinese," he said. "I am currently taking Chinese lessons twice a week. As of today, I can communicate much better with both the people at work and on the street. I have improved my Chinese a lot. I can definitely improve it more, however."

Another surprise has been the behaviors of Chinese motorists.


*In his new role as Industrial Transition Lead at the Tianjin OE facility, Paco Cossio is helping create a "Visual Factory" at the Chinese site. This includes the signage visible in the above photo. "The work areas must be self-explaining," he said. "When anyone walks into the workplace, the current situation – what's happening 'real time' – must be clearly visible."*

## *A two-way learning experience*

"The way people drive their cars on the streets is very different than what I'm used to," Cossio said.

He was referring to the fact that the concept of "right of way" is quite different in China than in many other countries. Specifically, any vehicle with a slight position lead or access to a gap before another vehicle has de-facto right of way to enter that gap. This essentially permits any driver to abruptly cut into the traffic flow, forcing the opposing vehicle to stop. This rule applies to lane changes… which can come at any time, from any angle.

Other "rules of the road" in the country include:

- Vehicles departing from intersections, side streets, alleys and parking lots merge onto any road without yielding to traffic already underway on that road.
- Bicycles and motorcycles – and sometimes, cars – ignore one-way signs. On divided highways, seeing pedestrians, bicycles and motorcycles going the wrong way down the shoulder is entirely normal.
- Public buses and many private buses are often among the most aggressive drivers. If they need to pass stopped or slower traffic, sometimes they use the oncoming traffic lanes… and will often employ their sheer size to enforce merging.

In addition to adjusting to driving behaviors, Cossio added that it has taken him awhile to get used to the food served in China (although he hastens to add that there are two specific dishes that most foreigners like: dumplings and Hot Pot). But differences aside, he said Tianjin and Mexicali share much in common.

"The Four Gears culture is what unites the two facilities," he noted. "Beyond that, both sites are part of the Aerostructures business unit. That means that, at the end of the day, both of the facilities are working towards the same objectives."

Cossio continued: "Everyone here is very friendly. And we all want to work hard and do things the right way. I'm really happy to work alongside my Chinese coworkers, especially because it's a two-way learning experience. Because we see and approach things from different perspectives due to our cultural differences, I can learn a lot from them and they can learn a lot from me."

*The Tianjin OE facility recently staged a ribbon-cutting ceremony for its first Quality Clinic. Pictured above at the ceremony are (from left to right): Goodrich Aerospace Technologies Tianjin OE General Manager Eric Peltier; Quality Manager Mary Qiao; Quality Engineer Gordon Wang; and Industrial Transition Lead Paco Cossio. Relentless Root Cause Analysis will be used within the clinic to resolve the highest impact turnbacks – anything that impedes the flow of material along its intended path – in assembly and fabrication operations.*

*Driving Continuous Improvement into government*

## City of Chula Vista's use of Lean tools makes it one of a very elite group of U.S. cities

When Chula Vista Mayor Cheryl Cox and a several city department heads approached Aerostructures leadership saying they were interested in "going Lean" a few years ago, they were greeted with open arms… as well as a few raised eyebrows.

"We were naturally skeptical when the city told us they were serious about applying Lean, given that 90 to 95 percent of all companies who set out to deploy Lean falter and give up quickly. And now a government entity was declaring its Lean intent?" said ACE/Quality and Support Functions Vice President Martin Lodge. "But we did have some Lean Practitioner training scheduled for ourselves and the least we could do was invite a couple of people to participate in that training. They accepted the offer."

That led to more municipal employees sitting in on additional Lean training sessions and ultimately culminated in Aerostructures offering a special, condensed week of training exclusively for city employees. Fast forward a couple of years and not only did the city build a critical mass of people trained in Lean principles, it created the position of Continuous Improvement Manager to further drive Lean into every facet of city government. The city even began paying for employees to augment their Aerostructures training by taking University of California San Diego extension courses in Lean methods and practices.

Two of those individuals were Iracsema Quilantan, assistant director of Operations, and Michael Lengyel, a senior management analyst – both in the Public Works department. They applied what they learned last year in a Lean event focused on preventive maintenance of city vehicles… and presented their results at a City Council meeting last month.

## *A healthy community and secure neighborhoods*

"The event was a very collaborative effort involving team members throughout the city and directly linking to two strategic city goals, one of which is: being a healthy community. To be that, we need to perform preventive maintenance on our vehicles to ensure that there is no disruption to the services we perform," Quilantan told city leaders and the public attending the City Council meeting. "For strong and secure neighborhoods, we worked closely with police and fire department to ensure that their vehicles were in good working order to allow them to be able to protect the public."

The event team included the city's fleet manager and three mechanics… with staff from the Police, Fire, and Public Works departments representing the internal customers. Lengyel said a lot of time was spent ensuring they had a bead on the problem they were setting out to solve.

"It's important to get a handle on the problem to ensure your countermeasures will address it. In this case, this issue was that we weren't hitting our metric in the shop of having preventive maintenance performed on 70 percent of the vehicles that are scheduled to receive it each month," he said. "What we discovered was that vehicles that come to the shop were being completed in the recommended time… but not every vehicle that was scheduled for maintenance was making it into the shop. And older vehicles that don't get their preventive maintenance then end up requiring repairs, which takes the vehicles out of service. That means the folks who need those vehicles don't have them… whether it's to go out and service a park or meet another need in a community. So we focused on increasing our ability to do preventive maintenance on all vehicles."


*A kaizen event held by the City of Chula Vista's Public Works Department that was focused on maintenance of city vehicles has already translated into substantial savings for the department. Results include slashing preventive maintenance steps by more than half and increasing vehicle maintenance shop capacity by a third. Here, Michael Lengyel, a senior management analyst, and Mike Britt, equipment mechanic, discuss some remaining opportunities for improvement in the vehicle maintenance shop. (Photo by Patrick Palmer)*

To do that, the event team applied more than a dozen Lean tools during their event, ranging from 5S to Root Cause Analysis to Spaghetti Charts and Standard Work. One issue that came to light was part shortages.

## *Maintenance instead of repairs*

"Waiting for a part meant means down time and loss of productivity, so we spent a lot of time on parts inventory and how to mitigate that problem," Lengyel said. "The team also recommended bringing in another mechanic to do preventive maintenance. That has a number of benefits, including changing the emphasis to maintenance instead of repairs. Repairs are more expensive than preventive maintenance, so, by doing this, down time is greatly reduced and the longevity of our vehicles is increased. That gives us savings in the long run by reducing vehicle replacement costs."

Ultimately the event team introduced more than two dozen countermeasure to remove non-value added steps in the preventive maintenance process. The list of results is impressive:

- preventive maintenance steps were reduced 53 percent, from 32 steps to 15;
- non-value added mechanic time for items such as preparation, administrative tasks, pickup and delivery was reduced 66 percent; and
- production capacity was increased by a third, enabling preventive maintenance for two additional vehicles a day

And that's not all.

"Whenever you go through a CI process, you identify other issues that need to be addressed," Lengyel said. "This year, we are going to look at whether we need to introduce loaner vehicles to help with the transportation of vehicles. And we're going to have a couple of smaller kaizen events to look at how we maintain our small tools – such as mowers and also heavy equipment – and what we use for wastewater treatment. We're also going to have events to delve into how we allocate mechanic time in the garage."

The CI successes achieved so far received resoundingly positive reviews at the council meeting at which they were presented. Councilmember Rudy Ramirez, an early advocate of the city adopting Lean, said that he is proud of not just the results of the event, but the overall progress the city has made in continuous improvement.

"When we encountered financial issues a few years ago, we were losing revenue and not able to cover certain things. The public didn't see that; they still expected a certain level of service for the same amount of money," Ramirez said. "And many of us stood up and said: *'You're right.'* But the challenge was how we were going to do that, how we could operationalize it. And this is it. What we saw with the vehicle maintenance is real savings, so we can do more with less in a systematic way that's integrated with the way we manage our operations."

City Manager Jim Sandoval added that the approach that Chula Vista has taken has put the city onto a very short list of government entities.

"There are a few cities in the country that do what we do when it comes to continuous improvement, but just a handful… and there are 20,000 cities in the U.S.," he said. "That makes us part of a very elite group. I'm happy with what we're doing with our continuous improvement programs and the fact that, ultimately, we can provide more services to our citizens."

Mayor Cox echoed Sandoval's sentiments and offered her congratulations to the entire event team.

"I think we should all be very proud of the work that you and your team have done in improving the workplace and your work product," she said. "UTC Aerospace Systems dedicated a lot of resources to enabling us to do this and I think they would be gratified to know the success we've achieved."

*"The future looks very bright"*

# UTC leader of Global Government Relations gets a good first impression of Aerostructures during Chula Vista visit

Gregg Ward, senior vice president of Global Government Relations at UTC, was impressed with both the size of nacelle systems and the strategic and tactical approaches our business unit takes to the future during a brief visit to the Chula Vista facility last week. Ward was on site for a quick tour and also a briefing by Aerostructures President Marc Duvall and his senior staff. He leads a team of about 60 people, half based in Washington D.C. and the remainder scattered around the globe in countries where UTC has major operations. *Skylines* caught up with him after the briefing to get some of his other impressions.

*Prior to a receiving a briefing on Aerostructures, UTC Senior Vice President of Global Government Relations Gregg Ward (pictured above, third from left) was given a tour of the Customer Center and some of the operations areas during a Jan. 15 stop in Chula Vista. In this photo, Jeff Rogers, vice president of Regional and Engine Programs and Business Development, explains a few of Aerostructures' key programs to Ward. Looking on (from left to right) are: Aerostructures President Marc Duvall; Rick Pyatt of UTC's Washington D.C. office; Engineering & Technology Vice President Colin Cramp; Boeing Programs Vice President Jim Pollock; and ACE/Quality & Support Functions Vice President Martin Lodge. (Photo by Patrick Palmer)*

**Global government relations sounds like a huge area of responsibility. What does your position entail?**

My job is to make sure that in major countries where we have operations and population, we have an organized and systematic approach to how we interact with government officials on major government policies and procurements. Our job is to try to harmonize our public policy positions, which vary from market to market.

For instance, our involvement in China is markedly different than what we're involved in elsewhere… whether its Brussels or Washington, D.C. The techniques that we use are different depending on the market. We are a large government contractor in the U.S. and we have significant interests around the globe. My job is to try to make sure we have the right people in the right places to advocate on our behalf in each of those country's capitals.

**I would imagine that your team's job is all the more challenging given the diversity of the UTC portfolio. It's not like you only look after aerospace-related issues.**

Our product line diversity is a great advantage for UTC. It's not exactly 50/50, but with the acquisition of Goodrich, we're now just over 50 percent aerospace. The fun part for me is having to keep multiple

balls up in the air at different places at the same time. The balance that the Goodrich acquisition brought to the company is reflected, I think, in the stock exchange and the way people think of UTC now, with both long-cycle and short-cycle businesses. We also have a great balance both functionally as well as geographically, and I think that contributes to why we're a highly regarded company; we can do many things in many parts of the world. There aren't that many companies that have that same capacity both on the commercial side as well as the aerospace side.

**What were your impressions of Aerostructures following your visit?**

I'm very impressed with your business unit, just as I was very impressed with the acquisition of Goodrich. I think it's a great complementary acquisition and a wonderful part of the UTC portfolio. In terms of Aerostructures, I can see that you are in a very healthy place and the future looks very bright. As you look at the charts for the next several years, it's very encouraging. It's also evident that Marc Duvall and his senior leadership team are doing all the right things and looking at things strategically, which will keep you healthy way into the future. In fact, you have both strategic and tactical approaches to the future that have been well thought through by your leadership team.

**What did you learn about Aerostructures that you didn't know before your visits?**

I didn't realize how huge the nacelles can be, especially for airplanes like the Boeing 787 Dreamliner or the Airbus A350 XWB! And the construction and functionality of the nacelles are much more complex that what I think the average Joe – myself included – would believe. I'm not an aerospace person. I came to the company from a different business line, so it was extremely interesting to learn about nacelle systems.

## Because You Asked

***Skylines* thanks Chula Vista Senior HRIS and Benefits Specialist Marc Yahl for his assistance with this week's question.**

*What's the current percentage of Gen Y, Gen X and Baby Boomer employees in the Chula Vista workforce?*

| Generational Category | # of employees in 4/07 | # in 11/11 | # in 1/14 |
|---|---|---|---|
| **Traditionalist** *(born in 1945 or earlier)* | 162 | 106 | 54 |
| **Boomer** *(born between 1946-1964)* | 1,398 | 1,330 | 1,151 |
| **Gen X** *(born between 1965-1980)* | 333 | 480 | 540 |
| **Gen Y - Millennial** *(born in 1981 and later)* | 56 | 227 | 471 |

As far as the average age of Chula Vista workforce members, it's 47.5 as of this month, compared to 45 for the overall U.S. Aerostructures workforce. Here are the average workforce ages at the other domestic facilities:

| Everett | Foley OE | Foley MRO | Jacksonville | Riverside | San Marcos |
|---|---|---|---|---|---|
| 41.9 | 41.8 | 47 | 45.1 | 46.5 | 45.5 |